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SUMMER MEETING OF THE AMERICAN MATHEMATICAL SOCIETY.

By H. E. SLAUGHT, University of Chicago.

The twentieth summer meeting and the seventh colloquium of the American Mathematical Society were held at Madison, Wisconsin, during the week September 8-13, 1913. There were 57 members of the Society in attendance at the meetings, together with a considerable number of others who were directly or indirectly interested. The summer meeting of the Society is the most representative in attendance of any during the year. Professor H. F. Blichfeldt from Stanford University and Professor W. F. Osgood from Harvard University represented the far West and the far East; while Professor G. H. Ling from the University of Saskatchewan, Canada, and Professor Oscar Bolza from the University of Freiburg, Germany, added an international character to the gathering. The largest delegation was naturally from the University of Wisconsin on whose campus the meetings were held. Ten members of the Wisconsin staff were in attendance. The next largest delegation was from the University of Chicago with seven members of the faculty and three graduate students. Then followed the University of Minnesota with five members, the University of Illinois with four, Indiana University with three, Harvard University, Brown University, Northwestern University and the University of Michigan with two each, Stanford University, University of Iowa, University of Freiburg, University of Missouri, University of Saskatchewan, University of Cincinnati, Washington University, Dartmouth College, James Millikan University, Pennsylvania State College, Miami University, University of Oregon, and University of Wooster with one each. Important institutions in the East from which there was no representation were Yale, Columbia, Princeton, Cornell and Pennsylvania; and in the West, Kansas, Nebraska and California.

Conspicuous for their absence also were representatives of the many colleges, especially in the Middle West, where the distances were not insuperable. In this connection it may be said with some force that the usual hasty reading of brief outlines of highly abstract and technical papers has little interest for the average teacher of mathematics in the colleges, and hence the inducement is small for him to attend such meetings. It may well be that the Society has gone too far in confining its meetings, in general, to such a presentation of papers and that, even for the members who do attend, the more frequent presentation of expository papers would be welcomed. At any rate, those who attended the Colloquium were charmed with the clearness of exposition on the part of both speakers. Even those who had little knowledge of the fields covered were most agreeably surprised to find that they were able to understand practically all of the matter presented. This revelation and the further phenomenon of a similar nature with respect to a paper on the general program, by Professor Bôcher of Harvard University, on "The infinite regions of various geometries," which had been

scheduled for ten minutes but for which Professor Osgood, in presenting it, used forty minutes, to the great delight and satisfaction of all who heard him,—these experiences led many to declare on the spot that time should be given in all our programs for the presentation in detail of some expository papers.

The general program, including four half day sessions, contained 46 papers, several of which were read by title only, the authors in such cases not being present. The time allowance for the papers read averaged fifteen minutes each. It is impossible to present any details of a technical paper in this time. Those who attempt to do so usually fail even to make clear the salient points of their papers; but those who devote the time allotted to stating the historical setting, the nature of the problem which the paper is attacking, and the results reached, usually leave a clear impression on the minds of the auditors. On this occasion there was a larger number than usual who followed the latter method of presentation, but some still persisted in attempting the impossible. Even ten minutes used in telling what a paper is about and what conclusions are reached is better than twenty or twenty-five used in attempting to show details of proof for a paper which may have required a year in preparation.

But, after all, the most important feature of such meetings is the opportunity to meet the men who are doing things in mathematics. To spend a week in intimate social intercourse with the choice men of our profession is the best tonic for scientific activity which one can take. The Madison meetings were admirably arranged to provide a maximum of opportunity for this purpose. There was ample time in the mornings, at noontime, and in the afternoons and evenings for little gatherings at the University Club House, in the homes of the local members, in the libraries, and on excursions, to renew old acquaintances and to make new ones, to strengthen personal attachments and to gain inspiration from close touch with others. There were dinner groups at the homes of Professors Van Vleck, Mason and others; there was an automobile ride about the beautiful suburbs of Madison in machines owned by the local members and their friends; there was a tour of inspection about the campus and buildings of the University of Wisconsin; and there was an excursion on Lake Mendota in a specially chartered steamer which provided a two hours' social gathering of all the members, while the beautiful views of the Capitol, the University, and the highland borders of the lake formed a panoramic background. The boat ride ended at the Golf Club House where dinner was served and informal addresses were made, some in lighter vein, some in serious consideration of matters important to the Society. The one thing lacking was the presence of Professor F. N. Cole whose services as Secretary of the Society and Managing Editor of the *Bulletin*, for many years, have led us to think that a meeting can hardly be complete without him. In recognition of this universal sentiment a telegram was sent to him expressing regret for his enforced absence.

As intimated above, the colloquium was the great attraction of this meeting. There were five lectures by Professor W. F. Osgood, of Harvard University, on "Topics in the theory of functions of several complex variables," and five lectures

by Professor L. E. Dickson, of the University of Chicago, on "Certain aspects of a general theory of invariants, with special consideration of modular invariants and modular geometry." It was a great satisfaction to listen to two such masters of exposition as Professors Osgood and Dickson and to have the results of long investigation in important fields so clearly set forth that even non-specialists in those fields could follow and understand at least sufficiently for real enjoyment. These lectures will doubtless be published and will thus become available as important contributions in their respective fields.

Six other colloquia have been held by the Society at intervals of three or four years and thus a body of mathematical investigations is gradually forming, as one product of our own membership, which is unique in character and importance. The attendance of 51 auditors at this colloquium exceeded that of any previous one, the nearest approach being that of the Yale colloquium in 1907 when there was an attendance of 43. There were 25 at Ithaca in 1901, 31 at Boston in 1903, and 28 at Princeton in 1909. The Madison colloquium was also marked as the only one thus far held in the West. Indeed, it was the "farthest west" summer meeting except the one in St. Louis in connection with the World's Exposition in 1904.

BOOK REVIEWS.

W. H. BUSSEY, CHAIRMAN OF THE COMMITTEE.

College Algebra. By WILLIAM BENJAMIN FITE. D. C. Heath & Co., Boston, 1913. iv + 283 pages. \$1.40.

The book covers the usual topics of elementary algebra in about the conventional order. In general, the treatment is lucid and the proofs are as rigorous as the limited comprehension of young students will permit. There are nineteen chapters on the following topics: The fundamental operations, factors and multiples, fractions, linear equations in one unknown, systems of linear equations in two or more unknowns, fractional and negative exponents and radicals, quadratics, systems of equations in two unknowns solvable by means of quadratics, progressions, permutations and combinations, mathematical induction, complex numbers, theory of equations, determinants, inequalities, partial fractions, logarithms, variation, and infinite series.

In Chapter I the fundamental operations are defined geometrically; the assumptions concerning real numbers are definitely stated, and the consequences drawn as theorems. While the teacher may find this treatment desirable, it will probably prove of little real value to those students for whom the book is intended.

In Chapter V one method of solution for systems of linear equations in two or more unknowns is by the use of second and third order determinants as formulae. Those teachers for whose purposes such an elementary treatment of